

WE CLAIM:

1. A time adjustment method in a telecommunication system, comprising:  
receiving, in a base station, a time reference signal providing time reference in  
the telecommunication system;

generating a test signal in the base station;

detecting the test signal in the base station; and

providing the test signal with time characteristics proportional to the time  
reference based on detection of the test signal and the time reference.

2. The method of claim 1 further comprising providing data transmitted  
from the base station with time characteristics proportional to the time reference by  
using the time characteristics of the test signal.

3. The method of claim 1 further comprising emitting the test signal from  
an antenna unit of the base station; and

detecting the test signal when emitting the test signal.

4. The method of claim 1 further comprising determining a delay between  
generating the test signal and detecting the test signal.

5. The method of claim 1 further comprising synchronizing the base station  
by using the time characteristics of the test signal.

6. A time stamping method in a telecommunication system, comprising:  
receiving, in a base station, a time reference signal providing time reference in the telecommunication system;  
generating an idle period in the transmission of a base station;  
determining, in the base station, time characteristics of the idle period relative to the time reference by means of a power measurement; and  
providing at least a portion of data to be transmitted from the base station with time characteristics proportional to the time reference by using time characteristics of the idle period.

7. The method of claim 6 further comprising positioning a mobile station by using time characteristics of the at least portion of data.

8. The method of claim 6 further comprising emitting the idle period from an antenna unit of the base station; and  
determining time characteristics of the idle period such that an uncertainty of a time interval between determining time characteristics of the idle period and emitting the idle period from the antenna unit of the base station is below a predefined value.

9. The method of claim 6 further comprising emitting the idle period from an antenna unit of the base station; and  
determining time characteristics of the idle period at a moment of emitting the idle period from the antenna unit of the base station.

10. The method of claim 6 further comprising determining timing of a predefined portion of the idle period relative to the time reference by means of the power measurement; and

providing the at least a portion of data to be transmitted from the base station with time characteristics proportional to the time reference by using the timing of the predefined portion of the idle period.

11. The method of claim 6 further comprising determining time characteristics of an idle period in a frame relative to the time reference;

providing the frame with the time characteristics proportional to the time reference by using time characteristics of the idle period in the frame.

12. The method of claim 6 further comprising emitting the idle period from an antenna unit of the base station;

detecting, in a mobile station, the idle period emitted from the antenna of the base station;

determining the time of arrival of the idle period in the mobile station; and

positioning the mobile station by using the time of arrival of the idle period.

13. The method of claim 6 further comprising synchronizing the transmission of the base station by using the time characteristics of the idle period relative to the time reference.

14. A telecommunication system comprising:  
a base station for providing radio transmission and reception for mobile stations;  
wherein the base station comprises a time reference signal receiving unit for receiving a time reference signal providing time reference in the telecommunication system;  
wherein the base station comprises an idle period generator for generating an idle period in the transmission of the base station;  
wherein the base station comprises a detecting unit operationally connected to the idle period generator and the time reference signal receiving unit for determining time characteristics of the idle period relative to the time reference by means of a power measurement; and  
a time stamping unit operationally connected to the detecting unit for providing at least a portion of data to be transmitted from the base station with the time characteristics proportional to the time reference by using the time characteristics of the idle period.

15. The telecommunication system of claim 14 further comprising a positioning unit operationally connected to the base station for positioning a mobile station by using time characteristics of the at least a portion of data.

16. The telecommunication system of claim 14, wherein the base station

comprises an antenna unit operationally connected to the idle period generator for emitting the idle period; and

wherein the detecting unit is configured to determine time characteristics of the idle period such that the uncertainty of the time interval between determining time characteristics of the idle period and emitting the idle period from the antenna unit of the base station is below a predetermined value.

17. The telecommunication system of claim 14, wherein the base station comprises an antenna unit operationally connected to the idle period generator for emitting the idle period; and

the detecting unit is configured to determine time characteristics of the idle period at a moment of emitting the idle period.

18. The telecommunication system of claim 14, wherein the detecting unit is configured to determine timing of a predefined portion of the idle period relative to the time reference by means of the power measurement; and

wherein the time stamping unit is configured to provide the at least a portion of data to be transmitted from the base station with time characteristics proportional to the time reference by using the timing of the predefined portion of the idle period.

19. The telecommunication system of claim 14, wherein the detecting unit is configured to determine the time characteristics of an idle period in a frame relative to time reference; and

wherein the time stamping unit is configured to provide the frame with the time characteristics proportional to the time reference by using time characteristics the idle period in the frame.

20. The telecommunication system of claim 14, wherein the base station comprises an antenna unit operationally connected to the idle period generator for emitting the idle period;

the telecommunication system further comprising a mobile station configured to detect the idle period emitted from the antenna unit of the base station;

wherein the mobile station is configured to determine the time of arrival of the idle period; and

wherein the positioning unit is configured to position the mobile station by using the time of arrival of the idle period.

21. The telecommunication system of claim 14, wherein the base station is configured to synchronize transmission of the base station by using time characteristics of the idle period relative to the time reference.

22. A time adjustment mechanism in a telecommunication system, comprising:

receiving means for receiving, in a base station, a time reference signal providing time reference in the telecommunication system;

generating means for generating a test signal in the base station;

detecting means for detecting the test signal in the base station; and  
providing means for providing the test signal with time characteristics  
proportional to the time reference based on detection of the test signal and the time  
reference.

23. The time adjustment mechanism of claim 22 further comprising  
providing means for providing data transmitted from the base station with time  
characteristics proportional to the time reference by using the time characteristics of  
the test signal.

24. The time adjustment mechanism of claim 22 further comprising emitting  
means for emitting the test signal from an antenna unit of the base station; and  
second detecting means for detecting the test signal when emitting the test  
signal.

25. The time adjustment mechanism of claim 22 further comprising  
determining means for determining a delay between generating the test signal and  
detecting the test signal.

26. The time adjustment mechanism of claim 22 further comprising  
synchronizing means for synchronizing the base station by using the time  
characteristics of the test signal.

27. A time stamping mechanism in a telecommunication system,  
comprising:

receiving means for receiving, in a base station, a time reference signal  
providing time reference in the telecommunication system;

generating means for generating an idle period in the transmission of a base  
station;

determining means for determining, in the base station, time characteristics of  
the idle period relative to the time reference by means of a power measurement; and

providing means for providing at least a portion of data to be transmitted from  
the base station with time characteristics proportional to the time reference by using  
time characteristics of the idle period.

28. The time stamping mechanism of claim 27 further comprising  
positioning means for positioning a mobile station by using time characteristics of the  
at least portion of data.

29. The time stamping mechanism of claim 27 further comprising emitting  
means for emitting the idle period from an antenna unit of the base station; and

second determining means for determining time characteristics of the idle  
period such that an uncertainty of a time interval between determining time  
characteristics of the idle period and emitting the idle period from the antenna unit of  
the base station is below a predefined value.



30. The time stamping mechanism of claim 27 further comprising emitting means for emitting the idle period from an antenna unit of the base station; and

second determining means for determining time characteristics of the idle period at a moment of emitting the idle period from the antenna unit of the base station.

31. The time stamping mechanism of claim 27 further comprising second determining means for determining timing of a predefined portion of the idle period relative to the time reference by means of the power measurement; and

second providing means for providing the at least a portion of data to be transmitted from the base station with time characteristics proportional to the time reference by using the timing of the predefined portion of the idle period.

32. The time stamping mechanism of claim 27 further comprising second determining means for determining time characteristics of an idle period in a frame relative to the time reference;

second providing means for providing the frame with the time characteristics proportional to the time reference by using time characteristics of the idle period in the frame.

33. The time stamping mechanism of claim 27 further comprising emitting the idle period from an antenna unit of the base station;

detecting means for detecting, in a mobile station, the idle period emitted from

the antenna of the base station;

second determining means for determining the time of arrival of the idle period in the mobile station; and

positioning means for positioning the mobile station by using the time of arrival of the idle period.

34. The time stamping mechanism of claim 27 further comprising synchronizing means for synchronizing the transmission of the base station by using the time characteristics of the idle period relative to the time reference.